

Contents

	Page
Tables	vi
Figures	viii
Acronyms and Abbreviations	x
Glossary	G-1
Chapter 1. Introduction	1-1
Background	1-1
Purpose of and Need for Management Plan (Project Objective)	1-2
Planning Period and Plan Revision	1-2
NEPA/CEQA Provisions	1-3
General	1-3
Programmatic Aspects	1-3
Impact Baseline and No-Action Alternative: Interim Management	1-3
Process and Required Approvals to Achieve Final Plan and Final EIS/EIR	1-4
Organization of This Document	1-4
Chapter 2. Planning Framework	2-1
Existing Direction for Land-Use Planning and Management	2-1
Legal Requirements	2-1
Management Guidelines	2-5
Planning Issues	2-7
Issues to Be Addressed	2-7
Issues Dismissed	2-8
Planning Criteria	2-8
Extent of Analysis	2-8
Range of Alternatives	2-11
Planning Assumptions	2-11
Chapter 3. Affected Environment (Environmental Setting) and Interim Management of the Reserve	3-1
Physical Environment	3-1
Location	3-1
Climate	3-1

Geology and Soils	3-2
Minerals	3-3
Social Environment	3-3
Adjacent Land Use	3-3
Timber Management History	3-3
Biological Resources	3-4
Watershed and Aquatic Habitat Conditions	3-4
Forest Vegetation	3-7
Aquatic Species and Habitat Needs	3-13
Wildlife Species and Habitat Needs	3-16
Interim Management of Biological Resources	3-22
Fire Regime and Hazard	3-24
Natural Fire Regime	3-24
Fire Risk	3-24
Visual Resources	3-28
Cultural Resources	3-28
Known Resources	3-28
Resource Condition	3-29
Interim Management	3-29
Recreation Activities	3-29
Access to the Reserve	3-29
Existing Trail Network	3-30
Interim Access and Use Limitations within the Reserve	3-30
Visitation and Visitor Preferences	3-30
Suitability for Special-Area Designations	3-31
Socioeconomic Environment	3-32
Locally Affected Communities	3-32
Regional Recreation Opportunities	3-32
Management Revenues	3-34
Existing Funding for Reserve Management	3-34
Federal/State Experiences with Recreation User Fees	3-34

Chapter 4. Management Goals and Direction..... 4-1

Introduction	4-1
Primary Focus of Reserve Management	4-2
Species Management	4-3
Management Goals	4-3
Species-Specific Goals, Management Direction, and Implementation Guidelines	4-4
Restoration of Old-Growth and Aquatic Ecosystems	4-13
Watershed Restoration	4-13
Forest Restoration	4-18
Research Management	4-22
Management Goals	4-22
Management Direction	4-23
Implementation Guidelines	4-25
Fire Management	4-28
Management Goals	4-28
Management Direction	4-28
Implementation Guidelines	4-29
Visual Resource Management	4-30

Recreation Access Management.....	4-30
Management Goals	4-31
Management Direction.....	4-31
Implementation Guidelines	4-33
Cultural Resource Management.....	4-37
Management Goals	4-37
Management Direction.....	4-37
Implementation Guidelines	4-38
Special Areas Designation and Management.....	4-39
Area of Critical Environmental Concern/Research	
Natural Area.....	4-39
Special Recreation Management Area	4-40
National Register of Historic Places	4-41
Wilderness Study Area	4-41
National Wild and Scenic River System	4-42
State of California Ecological Reserve	4-43
Off-Highway Vehicle Designations	4-43
Resource Monitoring and Evaluation.....	4-43
Management Goals	4-44
Management Direction.....	4-44
Implementation Guidelines	4-45
Management Revenue and Expenditures	4-46
Management Goals	4-46
Management Direction.....	4-46
Chapter 5. Management Alternatives	5-1
Introduction	5-1
Alternatives for Restoration of Old-Growth and Aquatic	
Ecosystems	5-2
Alternatives for Recreation Management	5-3
Alternatives for Special-Area Designations	5-6
Alternatives for Management Revenue	5-8
Chapter 6. Environmental Consequences (Environmental Effects	
and Alternative Comparisons).....	6-1
Introduction	6-1
Effects Summary	6-2
Species Management.....	6-2
Effects of Species Management on Special-Status	
Species	6-3
Effects of Species Management on Common Species.....	6-3
Effects of Species Management on Recreation.....	6-3
Watershed Restoration	6-3
Effects of Watershed Restoration on Water Quality and	
Aquatic Species	6-3
Effects of Watershed Restoration on Forest Structure	
and Old-Growth Characteristics.....	6-6
Effects of Watershed Restoration on Special-Status	
Plants.....	6-7

Effects of Watershed Restoration on Invasive Nonnative Plants	6-7
Effects of Watershed Restoration on Wildlife	6-8
Effects of Watershed Restoration on Fire Suppression.....	6-11
Effects of Watershed Restoration on Recreation Activities	6-11
Effects of Watershed Restoration on Cultural Resources	6-11
Forest Restoration	6-11
Effects of Forest Restoration on Forest Structure and Old-Growth Characteristics	6-11
Effects of Forest Restoration on Special-Status Plants	6-15
Effects of Forest Restoration on Invasive Nonnative Plants.....	6-16
Effects of Forest Restoration on Water Quality and Aquatic Species.....	6-17
Effects of Forest Restoration on Wildlife	6-18
Effects of Forest Restoration on Fire Behavior and Fire Management.....	6-21
Effects of Forest Restoration on Recreation Activities	6-23
Effects of Forest Restoration on Cultural Resources	6-23
Research Management	6-24
Effects of Research Management on Research Activities	6-24
Effects of Research Management on Biological Resources	6-24
Effects of Research Management on Resource Monitoring.....	6-24
Fire Management	6-25
Effects of Fire Suppression on Fire Frequency and Behavior	6-25
Effects of Fire Suppression on Biological Resources	6-25
Effects of Fire Suppression on Research	6-26
Effects of Fire Suppression on Recreation	6-26
Visual Resource Management	6-26
Recreation Management	6-27
Effects of Recreation Management on Visitor Experiences.....	6-27
Effects of Recreation on Special-Status Plants	6-31
Effects of Recreation on Invasive Nonnative Species	6-32
Effects of Recreation Management on Aquatic Ecosystems	6-32
Effects of Recreation on Wildlife.....	6-35
Effects of Recreation Management on Cultural Resources	6-41
Socioeconomic Effects of Recreation Management.....	6-42
Effects of Recreation on Fire Behavior and Management.....	6-43
Effects of Recreation on Resource Monitoring	6-43
Management of Designated Special Areas	6-43
Wilderness Study Area	6-44
Wild and Scenic River	6-44

State of California Ecological Reserve	6-45
Resource Monitoring and Evaluation.....	6-45
Effects of Resource Monitoring on Ecological Resources.....	6-45
Effects of Monitoring on Visitation	6-45
Management Revenue	6-46
Effects Common to All Management Revenue Alternatives	6-46
Relative Effects of the Management Revenue Alternatives	6-46
Chapter 7. References Cited	7-1
Printed References	7-1
Personal Communications.....	7-8
 Appendix A. U.S. Fish and Wildlife Service Species List	
 Appendix B. Applicable Management Guidelines from the Northwest Forest Plan	
 Appendix C. Reserve Legislation	
 Appendix D. Federal Recreational Fee Demonstration Program	
 Appendix E. Visual Resource Management Classes	
 Appendix F. Visitor Management Zones	
 Appendix G. Headwaters Wilderness Inventory and Study	
 Appendix H. Wild and Scenic River Eligibility and Suitability Study	
 Appendix I. State of California Ecological Reserve Regulations	
 Appendix J. Alternatives Considered But Eliminated	
 Appendix K. List of Preparers	
 Appendix L. Individuals and Organizations Receiving Notice of This Document	
 Appendix M. Index	

Tables

	Follows Page
3-1 Extent of Potential Natural Vegetation Types in the Headwaters Forest Reserve.....	On 3-8
3-2 Environmental Characteristics of Vegetation Types in the Headwaters Forest Reserve	On 3-8
3-3 Seral Stages of the Headwaters Forest	On 3-9
3-4 Special-Status Vascular Plants with Potential to Occur in the Headwaters Forest Reserve	3-12
3-5 Fungi and Lichen Survey-and-Manage Species Identified in the Headwaters Forest Reserve	3-12
3-6 Special-Status Fish and Wildlife Species of the Headwaters Forest Reserve	3-14
3-7 Existing Suitable Nesting Habitat for Northern Spotted Owl and Marbled Murrelet in the Headwaters Forest Reserve.....	On 3-20
3-8 Topographic Position of Existing Trails	On 3-26
3-9 Risk of Stand-Replacing Fire of Various Seral Stages and Topographic Positions.....	On 3-27
3-10 Summary of Existing RSRF at the Reserve	On 3-27
3-11 Status of Regional Recreation Opportunities	3-34
4-1 Extent of Road Decommissioning Needed in the Reserve	On 4-15
4-2 Factors Determining Priority of Watersheds for Watershed Restoration	On 4-16
4-3 Forest Restoration Objectives by Seral Stage	4-20
4-4 Extent and Factors Determining Priority of Areas for Forest Restoration.....	4-20

4-5	Estimated Prescription Data for Alternative 2A: Medium Intensity Forest Restoration	4-22
4-6	Estimated Prescription Data for Alternative 2B: Low Intensity Forest Restoration	4-22
4-7	Monitoring Needs for Plan Implementation	4-44
4-8	Costs of Reserve Management	4-46
5-1	Summary of Management Alternatives	5-2
5-2	Existing and Potential Components of a Recreation Trail System for the Headwaters Forest Reserve.....	5-4
5-3	Trail Routes of the Recreation Access Alternatives	5-4
6-1	Summary of Environmental Consequences	6-2
6-2	Extent of Watershed Restoration	On 6-6
6-3	Extent of Forest Restoration Candidate Areas	On 6-14
6-4	Risk of Stand-Replacing Fire (RSRF) of Stands to Be Treated under the Forest Restoration Alternatives	On 6-22
6-5	Fire Ignition Hazard of the Forest Restoration and Trail Alternatives.....	6-22
6-6	Area of Wildlife Habitat Disturbance for the Recreation Alternatives.....	On 6-37
6-7	Constraints Imposed by Special-Area Designations and Their Implications	6-44

Figures

	Follows Page
1-1 Location of the Headwaters Forest Reserve	1-2
3-1 General Characteristics of the Headwaters Forest Reserve	3-2
3-2 Geology and Watersheds of the Headwaters Forest Reserve	3-2
3-3 Timber Harvest History of the Headwaters Forest Reserve	3-4
3-4a Generalized Seral Stages of Vegetation in the Headwaters Forest Reserve	3-10
3-4b Detailed Seral Stages of Vegetation in the Headwaters Forest Reserve	3-10
3-5 Range of Anadromy in the Headwaters Forest Reserve	3-14
3-6 Marbled Murrelet Nesting Survey Results in the Headwaters Forest Reserve	3-20
3-7 Northern Spotted Owl Nesting Behavior Sightings in the Headwaters Forest Reserve	3-20
3-8 Regional Recreation Opportunities	3-34
4-1 Proposed Watershed Restoration in the Headwaters Forest Reserve	4-14
4-2 Interpretive Facilities Proposed for the Elk River Corridor	4-32
5-1 Visitor Management Zones and Potential Trail System in the Headwaters Forest Reserve	5-4
5-2a Trail Profiles	5-4
5-2b Trail Profiles	5-4
5-2c Trail Profiles	5-4

5-3	Wilderness Study Area Alternatives in the Headwaters Forest Reserve	5-6
6-1	Disturbance Zones for Trail Alternative 4A.....	6-40
6-2	Disturbance Zones for Trail Alternative 4B.....	6-40
6-3	Disturbance Zones for Trail Alternative 4D.....	6-40

Acronyms and Abbreviations

ACEC	Area of Critical Environmental Concern
BLM	Bureau of Land Management
CDF	California Department of Forestry and Fire Protection's
CEQA	California Environmental Quality Act
CESA	California Endangered Species Act
CNDDB	California Natural Diversity Data Base
CNPS	California Native Plant Society
dbh	diameters at breast height
DFG	Department of Fish and Game
DOI	U.S. Department of Interior
EIR	environmental impact report
EIS	environmental impact statement
EIS/EIR	environmental impact statement/environmental impact report
ESA	Endangered Species Act
ESUs	Evolutionarily Significant Units
FLPMA	Federal Land Policy and Management Act
HCP	Habitat Conservation Plan
LWD	large woody debris
MOU	memorandum of understanding
MWD	moderate woody debris
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NLCS	National Landscape Conservation System
NMFS	National Marine Fisheries Service
NWSRS	National Wild and Scenic River System
PALCO	Pacific Lumber Company
PWA	Pacific Watershed Associates

Reserve	Headwaters Forest Reserve
RNA	Research Natural Area
ROD	Record of Decision
RSRF	risk of stand-replacing fire
SRMA	Special Recreation Management Area
STC	Simpson Timber Company
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
VRM	Visual Resource Management
WSA	Wilderness Study Area